

Knowledge, Attitude, Practice, and psychological response of Pediatric nursing students toward COVID-19 in Assiut University

Amira Hassan Abdalfatah¹, Yasmen Adel Mohammed², Walaa Hassan Abdalfatah³, Mona Fawzy Husien⁴ & Amal Abdrbou Hussien⁵

¹Lecturer of Pediatric Nursing, Faculty of Nursing, Assiut University, Egypt.

²Lecturer of Pediatric Nursing, Faculty of Nursing, Mirs University for Science and Technology, Egypt

³Assistant Professor of Community Health Nursing, Faculty of Nursing, Assiut University, Egypt

⁴Lecturer of Psychiatric Mental Health Nursing, Faculty of Nursing, Assiut University, Egypt

⁵Assistant Professor of Pediatric Nursing, Faculty of Nursing, Assiut University, Egypt.

Abstract

Background: The World Health Organization has specified (COVID-19) to be a contagion. People's communicable disease information, attitude, and practices (KAP) might have a great effect on whether they might detect the protective procedures. **The study aimed** to assess Knowledge, Attitude, Practice and psychological response of Pediatric nursing students toward COVID-19 at Assiut University. **Method** A descriptive research design was used. The study was done at Faculty of Nursing, Assiut University with A convenient sample of all third year the pediatric nursing students who approved to contribute in the study. **Tool of data collection:** four tools were used in this study **Tool I:** It included personal data, **Tool II:** It includes 28 questions about student's attitude toward spread of Covid 19, **Tool III:** It includes 9 questions about psychological response, **Tool IV:** It includes 14 questions about students practice **Results:** The result indicates that more than half of studied sample have adequate knowledge and negative attitude regarding covid19. The majority of studied sample (80.6%) had unsatisfactory practice and negative psychological reaction towards covid19. There is a very highly statistical significance difference between total knowledge and total practice and between total knowledge and total attitude as well. **Conclusion:** This study showed that the pediatric nursing students had adequate knowledge, unsatisfactory practices, negative attitude and psychological response toward the COVID19 outbreak. **Recommendations:** Health education programs should be developed according to their areas of knowledge and practice deficits and provided for students

Keywords: COVID-19, knowledge, Attitude, Practice & Psychological responses.

Introduction

Recent fatal coronaviruses have been often referred to as having coronavirus 2 acute respiratory pattern (SARS- COV- 2), COVID- 19 caused a significant community health crisis COVID- 19 was classified as a global health problem by the World Health Organization (WHO 2020a).

The COVID- 19 disease in Egypt is part of the universal coronavirus complaint outbreak. On February 14, 2020, it was established that Egypt had become a contagious region. Egyptian Ministry of Health announced the nation's first incidence of COVID 19 on February 14. The incident occurred at Cairo International Airport. The World Health Organization (WHO) had been informed, and the case was placed under restricted isolation in a hospital. The peak day for coronavirus (COVID- 19) cases in Egypt was on August 27, 2020, with 602 case/days. The biggest day rise in prevalence w/as, 774 cases on June 19, 2020 (Egypt's health ministry, 2020)

Governments have imposed restrictions on individuals at home and closed schools and universities to halt the spread of COVID-19 that affected on 1,067,590,512 students (Meinck et al., 2022). It is advised that students refrain from taking part in any public activities while confined to their homes until July 10 of 2020 because doing so raises their risk of experiencing unpleasant reactions like depression and anxiety problems (Xie et al., 2020). Also Browning et al., (2021) who looked into the psychological impacts of COVID-19 on scholars found a variety of outcomes on students' emotions and behaviour. The most prevalent alterations in how students felt were a lack of enthusiasm, worry, tension, and loneliness when compared to before the outbreak.

However, the assessment of knowledge, attitude, and practice (KAP) research is critical for determining the public's degree of awareness of COVID-19. The outbreak has a massive impact on all educational stakeholders. Peng et al., 2020 demonstrated that Chinese college scholars were aware of COVID-19,

and that they had a positive outlook and engaged in pro-active conduct throughout the outbreak.. Most of students and people gained information mostly through innovative media outlets, which have both pros and disadvantages. Pediatric, psychiatric and community health nurse play a vital role on assessing how nursing students deal during outbreaks and which information they had about the disease, and which habits they did. Also, student's approach and psychological state play a significant role in overcoming the disease with little complications (Abdelhafiz et al., 2020).

Significance of the Study:

However, only a small number of studies have looked at the COVID-19 KAP in college students who were also affected by the outbreak. In addition, people's mental health may be impacted by public health issues. In order to improve illness management and health teaching among university students in impacted countries, it is essential to assess student awareness of COVID-19. This study examined the knowledge, attitude, practice and psychological responses related to COVID-19 among faculty students at the time of COVID-19 contagion (Pfefferbaum & North, 2020). The disease spread to over 200 nations and had a fatality rate of around 5.7 percent. Egypt is one of the most densely inhabited countries in the Arab world, Africa, and the Middle East. Egypt is one of the most populated countries in Africa, with a population of over 100 million people. This large number of citizens may pose a significant risk of disease spread and mortality, particularly among individuals suffering from chronic conditions. An international effort has been launched to stop the virus's spread. (Abdelhafiz et al., 2020)

Aim of the Study:

The study aim is to assess Knowledge, Attitude, Practice and Psychological Response of Pediatric Nursing Students toward COVID-19 at Assiut University.

Research questions:

What is the Knowledge, Attitude, Practices, and Psychological Response of Pediatric Nursing Students toward COVID-19 at Assiut University?

Subjects and Method

Research Design: Descriptive research design was used in this study.

Setting: The study was conducted in pediatric nursing department, Faculty of Nursing, Assiut University.

Subjects: A convenience sample of all third-year pediatric nursing students (200 students) were enrolled in the first semester of the academic year, 2020-2021.

Inclusion criteria:

- 1-Third year pediatric nursing students
- 2-Their age ranged from 18-21 years old
- 3-Free of any disability or any other chronic disease.

Sample Size:

Current study was conducted on 200 third year students. The sample was calculated according to the following equation: $n = [DEFF * Np(1-p)] / [(d^2 / Z^2 - \alpha/2 * (N-1) + p*(1-p)]$ DEFF (Design effect) = 1, N (population) = 400, p (Hypothesized %) = 50% +/- 5, d (tolerated margin of error) = 0.05, Z (level of confidence) = 1.96, α (Alpha) = 0.05, $n = [1 * 100 * 50\% +/- 5 (1-50\% +/- 5) / [(0.05)^2 / (1.96)^2 - 0.05 * (100-1) + 50\% +/- 5 (1-50\% +/- 5)]$ n = 196 that increased to 200 student

Tools of the study:

Four tools utilized for this study, were adapted from other published articles and a wide-ranging analysis of related literature and views of the specialists (Tadesse et al., 2020 & Peng et al., 2020).

Tool I: It included personal data such as name, name of university, age, sex, grade and Socio-economic and 18 questions related to the participants own knowledge about covid19 was based on an extensive up-to-date literature review.

Scoring system:

Students' knowledge towards COVID-19 was assessed using eighteen questions; correct answers (yes) were scored 1. Incorrect answers (no) were scored zero, pediatric nursing student's overall knowledge score ranged from 0 to 18 (maximum correct answers) in adequate knowledge was <9, adequate knowledge was ≥ 9 .

Tool II: It includes 28 questions about student's attitude toward spread of Covid 19 such as when I meet my friends and colleagues, I will always greet them with a handshake, and I wash my hands regularly and for enough period.

Scoring system:

Scoring system for each question ranged from 1-5 scores. Strongly disagree =1, Disagree=2, Neutral=3, Agree=4 and strongly agree=5. Total scores ranged from 28 (considered negative) and > 28 to 140 (considered positive).

Tool III: It includes 9 questions about psychological response of students toward spread of covid19 such as I felt depressed and hopeless/ Level of fear of COVID-19, and I tended to have no appetite or overeat.

Scoring system:

Scoring system for each question ranged from 1-4 scores. Not disturbed at all=1, for a few days disturbance=2, Disturbed for more than 7 days=3, Almost daily disturbance=4 Total scores ranged from 28 (considered negative) and > 28 to 140 (considered positive).

Tool IV: It includes 14 questions about students practice during spread of covid19 such as Have you visited any crowded locations? And If you left your house, did you wear a mask?

Scoring system:

Student's practice was assessed by using 14 questions (with minimum score 14 and maximum score 70) **Scoring system for each question ranged from 1-5 scores.** Never =1, occasionally=2, sometimes=3, most of the time=4 and always =5. A mean score >42 (answering for always or most of the time or sometimes) was considered satisfactory practice and a score of ≤42 was considered unsatisfactory practice (answering never or 5 occasionally).

Method:

- A certified agreement was taken from the Dean of Faculty of Nursing to gather data from pediatric nursing students.
- A jury of five professors from pediatric, psychiatric, and community health nursing evaluated the structured interview questionnaire's validity index. it was 0.87. In a pilot study, the study instruments' reliability was examined by quantifying their internal consistency with Cronbach's alpha. This turned to be ($\alpha = 0.816$) to study tool
- Ethical approval was obtained from the Ethical Committee and Committee of post graduate studies and research at the Faculty of Nursing - Assiut University with number (301) in 30/5/2021 & 13/6/2021. Pediatric nursing students were informed about the study's goal and scope. Also, they were informed that they had the option to

engage in the study or not. Oral consent was assured to share in the study by every pediatric nursing student and they reassured that the data acquired would be private and were handled only for the study.

- A pilot research was conducted on 10% (20) of pediatric nursing students to assess the simplicity of the study's tools and to calculate approximately the time needed to complete the sheet. Based on the findings of the pilot research, no changes were made. The study sample includes the pilot research sample.

Field work

The data were collected for three months; from the 1st of April 2020 to the end of June 2021. The researchers interviewed pediatric nursing students in pediatric labs at Faculty of nursing. During the meeting, researchers described the study's aims and nature. About ten students were interviewed/ day two times/week. Depending on the student's response, it took an average of 20 to 30 minutes to complete the form.

Statistical analysis:

Data entry and data analysis were done using statistical package for the social science (SPSS) version 20. Data were presented as number, percentage means and standard deviation. Chi-square test was used to show relation between variables. P-value considered statistically significant when $p < 0.05$.

Result

Table (1) Distribution of studied sample according to their personal characteristics:

Personal characteristics of students:	N (200)	%
Age mean± SD	21.69±.995	
Sex		
• Male	143	71.5
• Female	57	28.5
Residence		
• Urban	112	56.0
• Rural	88	44.0
Previous certificate		
• Secondary certificate	167	83.5
• Nursing institute	33	16.5
Marital status		
• Single	191	95.5
• Married	9	4.5

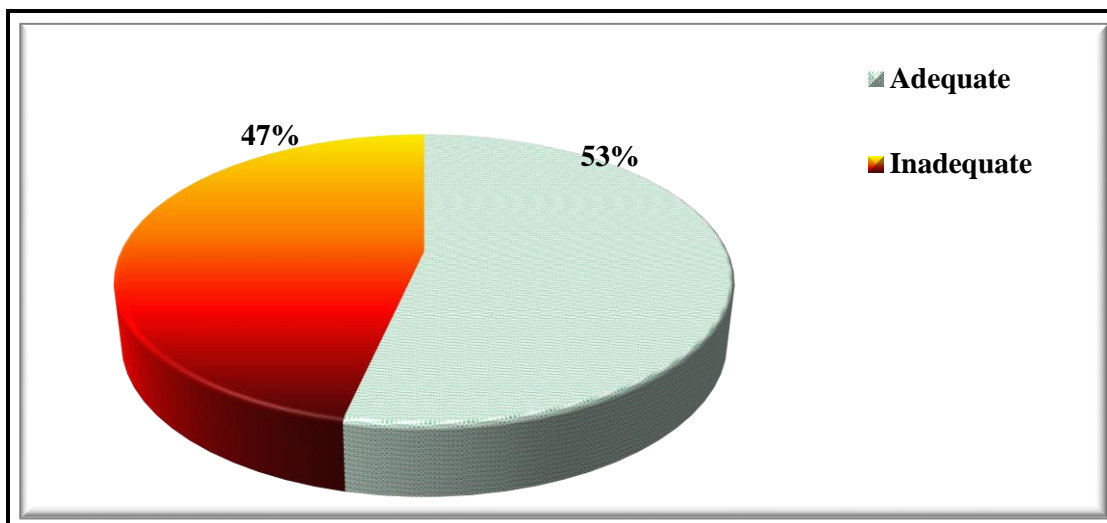


Figure (1): Distribution of studied sample according to their level of knowledge about covid-19

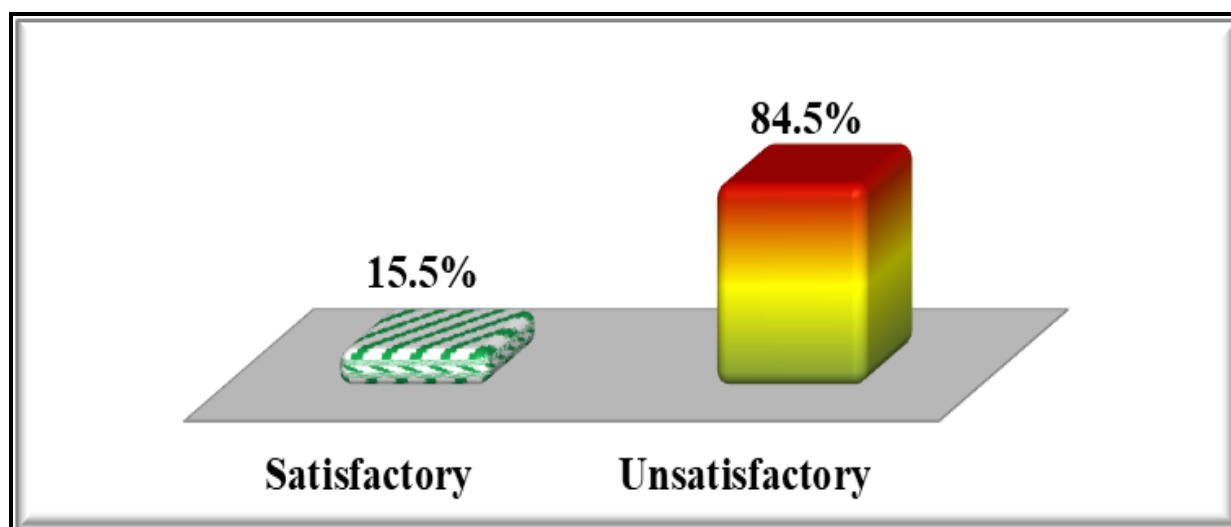


Figure (2): Distribution of studied sample according to total practices about covid-19

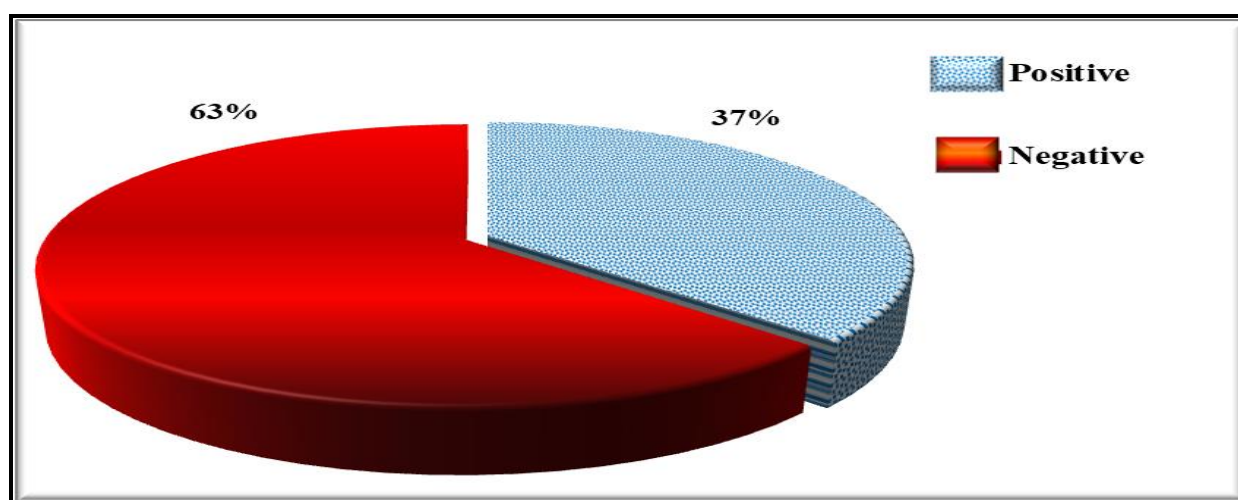


Figure (3): Distribution of studied sample according to total attitude regarding covid-19

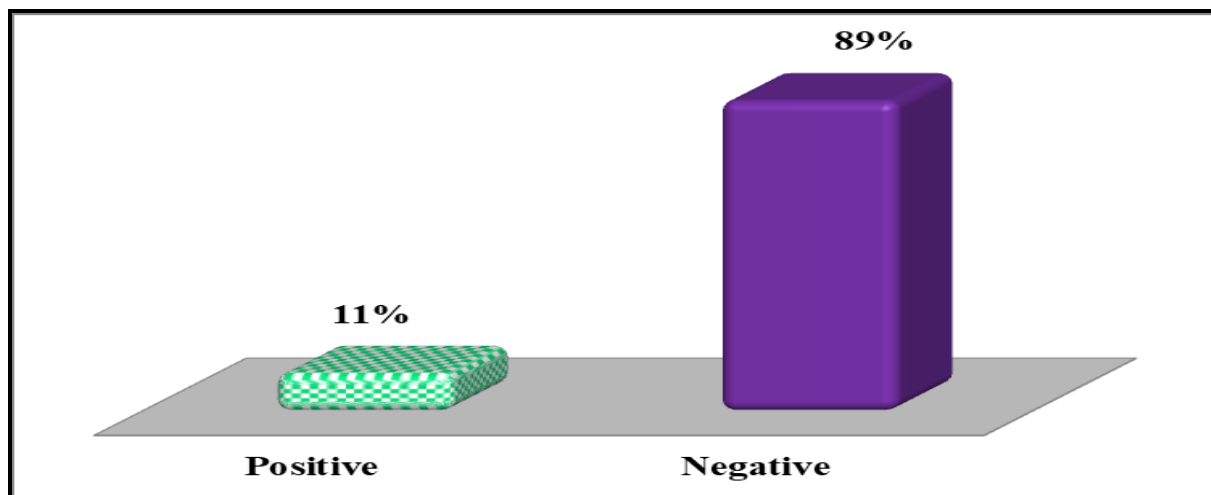


Figure (4): Distribution of studied sample according to total psychological response regarding covid-19

Table (2): Associative relationship between levels of knowledge, practice, and personal characteristics of students

Personal characteristics of students:	Total knowledge		p-value1	Total practices		p-value2
	Adequate	In adequate		Satisfactory	Unsatisfactory	
	N (%)	N (%)		N (%)	N (%)	
Sex						
• Male	74(51.7)	69(48.3)	0.431	16(11.2)	127(88.8)	0.008**
• Female	33(57.9)	24(42.1)		15(26.3)	42(73.7)	
Residence						
• Urban	54(48.2)	58(51.8)	0.091	18(16.1)	94(83.9)	0.801
• Rural	53(60.2)	35(39.8)		13(14.8)	75(85.2)	
Previous certificate						
• Secondary certificate	91(54.5)	76(45.5)	0.527	25(15.0)	142(85.0)	0.641
• Nursing institute	16(48.5)	17(51.5)		6(18.2)	27(81.8)	
Marital status						
• Single	100(52.4)	91(47.6)	0.135	31(16.2)	160(83.8)	0.189
• Married	7(77.8)	2(22.2)		0(0.0)	9(100.0)	

(**) highly statistically significant difference

(*) Statistically significant difference $p < 0.05$

Table (3): Associative relationship between attitude, psychological response, and personal characteristics of students

Personal characteristics of students:	Total attitude		p-value1	Total psychological response		p-value1
	Positive	Negative		Positive	Negative	
	N (%)	N (%)		N (%)	N (%)	
Sex						
• Male	45(31.5)	98(68.5)	0.010**	14(9.8)	129(90.2)	0.386
• Female	29(50.9)	28(49.1)		8(14.0)	49(86.0)	
Residence						
• Urban	43(38.4)	69(61.6)	0.645	15(13.4)	97(86.6)	0.222
• Rural	31(35.2)	57(64.8)		7(8.0)	81(92.0)	
Previous certificate						
• Secondary certificate	60(35.9)	107(64.1)	0.480	18(10.8)	149(89.2)	0.822
• Nursing institute	14(42.4)	19(57.6)		4(12.1)	29(87.9)	
Marital status						
• Single	70(36.6)	121(63.4)	0.636	21(11.0)	170(89.0)	0.991
• Married	4(44.4)	5(55.6)		1(11.1)	8(88.9)	

(**) highly statistically significant difference

Table (4): Distribution of studied sample according to relation between total knowledge and total practices, attitude, and psychological response

Variables	Total knowledge		p-value1
	Adequate	In adequate	
	N (%)	N (%)	
Total practices • Satisfactory • Un satisfactory	25(80.6) 82(48.5)	6(19.4) 87(51.5)	0.001**
Total attitude • Positive • Negative	55(74.3) 52(41.3)	19(25.7) 74(58.7)	0.001**
Total psychological response • Positive • Negative	11(50.0) 96 (53.9)	11(50.0) 82(46.1)	0.727

(**) highly statistically significant difference

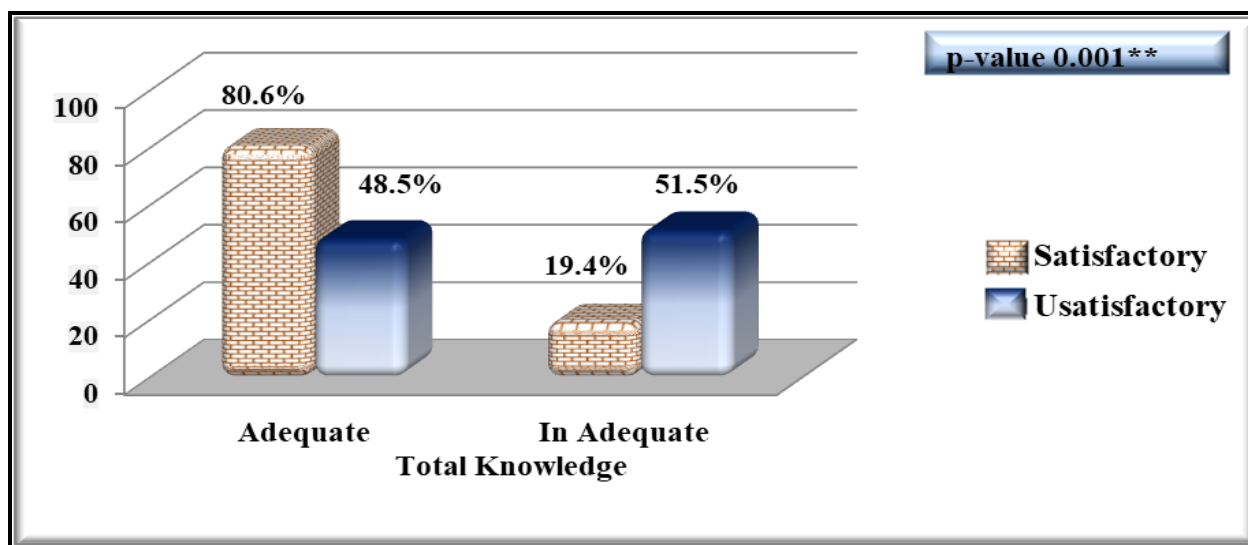


Figure (5): Distribution of studied sample according to relation between total knowledge and total practices

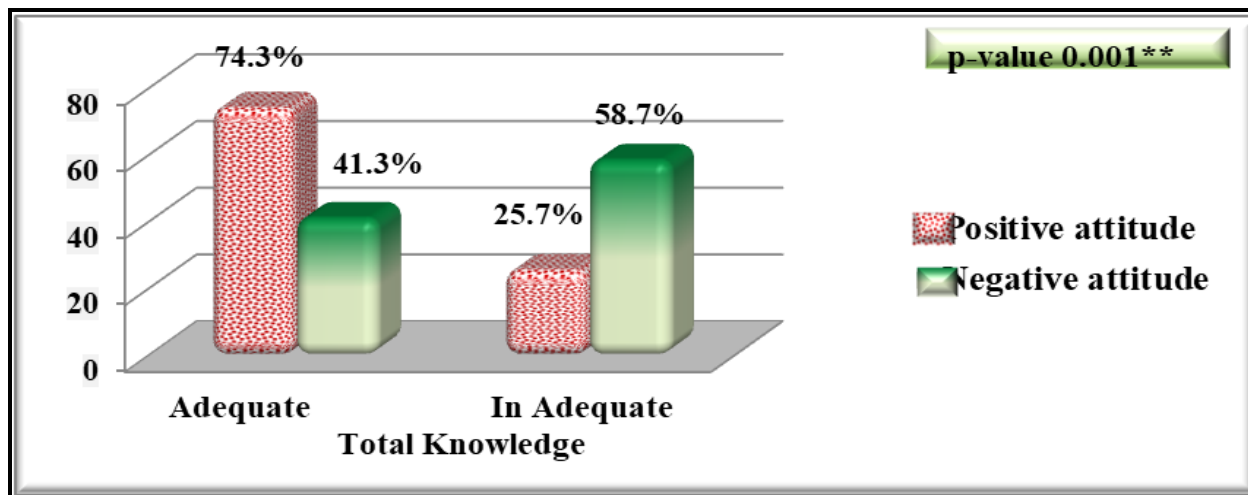


Figure (6): Distribution of studied sample according to relation between total knowledge and total attitude

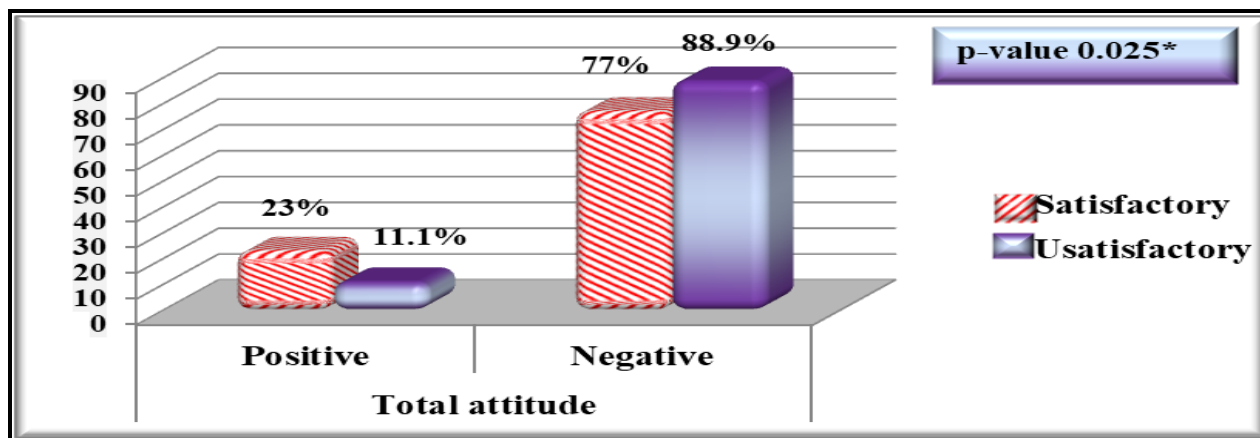


Figure (7): Distribution of studied sample according to relation between total attitude and total practices.

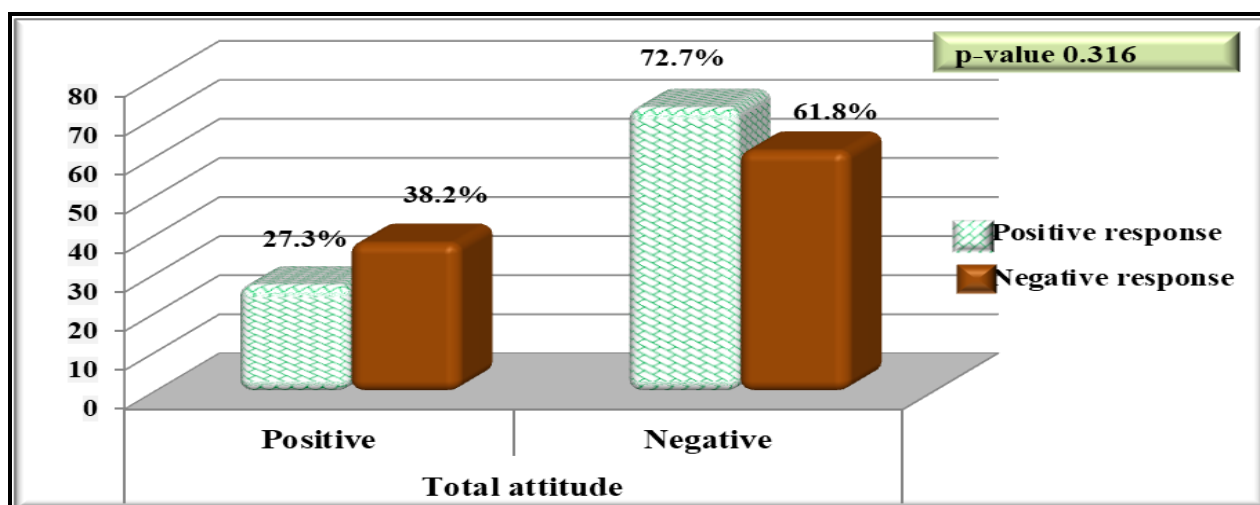


Figure (8): Distribution of studied sample according to relation between total attitude and psychological response

Table (1): Illustrates that the mean age of studied sample was 21.69 +0. 995. Regarding to sex, 71.5% were males while 28.5% were females. According to residence, 56.0% were from urban. In relation to previous certificate and marital status of studied sample, 83.5%and 95.5% were secondary certificate and single respectively.

Figure (1): Indicates that 53% of studied sample have adequate knowledge

Figure (2): Clarifies distribution of studied sample according to total practices about covid-19 15.5% of studied sample have satisfactory practice while 84.5% have unsatisfactory practice.

Figure (3): Shows distribution of studied sample according to total attitude regarding covid-19. (63%) of studied sample have negative attitude regarding covid 19.

Figure (4): Shows distribution of studied sample according to total psychological response regarding

covid-19. 11% of studied sample had positive psychological response toward covid19 while 89% of studied sample had negative psychological response.

Table (2): Illustrates that there is no statistical significance difference between personal characteristics of students and their knowledge p value (0.43, 0.09, 0.52, 0.135) respectively while there is highly statistical significance difference between sex and total practice p value (0.008).

Table (3): Clarifies the relation between personal characteristics of students, attitude, and psychological response of studied sample in which there is highly statistical significance difference between sex and total attitude p value (0.010).

Table (4): Shows relation between total knowledge with practice, attitude and psychological response in which there is highly statistical significance difference between total knowledge and total practice p value (0.001). Also there is highly statistical

significance difference between total knowledge and total attitude p value (0.001) while there is no statistical significance between knowledge & psychological response p- value (0.727).

Figure (5): Presents that there is very highly statistical significance difference between practice and knowledge p-value (0. 0.001)

Figure (6): Demonstrates that there is very highly statistical significance difference between attitude and knowledge p-value (0.001)

Figure (7): Clarifies that there is statistical significance difference between attitude and practice p-value (0. 025)

Figure (8): Illustrates that there is no statistical significance difference between attitude and psychological response p-value (0. 316)

Discussion

The World Health Organization has announced Coronavirus disease 2019 (COVID- 19) to be an outbreak. Public health education is extensively admitted as an effective system of avoiding and controlling public health crises by preparing the public for similar affairs. (Abdelhafiz et al., 2020). It may affect people's KAP by spreading suitable knowledge, alleviating fear, encouraging a positive attitude, and as well as maintain people's reaction with supported and desired ways. All these KAP elements are vital to confirming competent crisis prevention and control. Pediatric nursing students were well-advised about COVID-19 and shown a good approach and positive manner against the outbreak, indicating that the organization has suggested effective health through broad public instruction. (Peng et al., 2020).

The current study aimed to assess Knowledge, Attitude, Practice, and psychological response of Pediatric nursing students toward COVID-19 at Assiut University.

The result of the current study indicated that there is no statistical significance difference between personal characteristics and knowledge p values (0.43, 0.09, 0.52, 0.135) respectively. This was argued with (Banik et al., 2020) who investigating knowledge, attitudes, and practices related to COVID-19 outbreak and (Haque et al., 2020) who confirmed that the knowledge of participants is greatly influenced by their personal characteristics such as age groups, sex, education levels, socio-economic classes, and places of residence.

Corresponding to sex, the current study showed that more than half of female students had adequate knowledge, positive approach, and practice than male this approve with (Ali et al., 2020) who studied knowledge, attitude, practice and fear of COVID-19 and (Peng et al., 2020) who informed that the female

had significantly higher score of knowledge, approach score and KAP total score of COVID-19.

According to the residence, the current study showed that students living in rural areas had more adequate knowledge than those in urban. This is contrary to Abdelhafiz et al., (2020) who studied knowledge, Perceptions, and Attitude of Egyptians towards the Novel Coronavirus Disease (COVID-19). Mentioned the mean knowledge score was significantly lower among those living in rural areas with lower education. This also disagrees with a Chinese study done by Zhong et al., (2020) who revealed that participants with high socioeconomic status were educated, and followed appropriate practices to inhibit the spread of COVID-19.

The current study demonstrated that there is no statistical significance difference between personal characteristics, knowledge, and psychological reactions this disagreed with (Abdelhafiz et al., 2020) who showed that there were statistically significant differences between knowledge mean scores and age of the studied sample ($p < 0.001$). Also, Banik et al., (2020) showed that Participant's knowledge scores significantly varied across age groups, genders, education levels, socio-economic classes, and residence places ($p < 0.05$).

Regarding students' information about Covid19, the current study reported that most of students agreed that Covid is a viral disease, fever, cough, sore throat, shortness of breath, fatigue were the main clinical warning signs of Covid 19, washing hands, using face Mask to prevent disease and ordinary residents used general mask to prevent contamination. This is in the same line with Subedi et al., (2020) who assessed knowledge, Attitude, and Practice Associated with COVID-19 Among School Students ,stated that more than 72% of students were aware that virus is the causal agent for COVID-19, the majority of students had general information about COVID-19 such as initial outbreak, cases in Nepal, kind of disease symptoms, and hand wash duration This could be interpreted as implying that, despite the fact that this condition is relatively new, a large proportion of high school pupils are already aware of it.

Regarding the transmission way of COVID-19, more than two-thirds of pediatric nursing students were aware that the principal way of spread is respiratory secretion and near contact. In the same line (Olaimat et al., 2020) who studied knowledge and Information Sources about COVID-19 among University Students in Jordan, showed that the real method of COVID-19 spread was saliva and nasal drip while talking, coughing and sneezing by ill individuals. Furthermore, (Ong et al., 2020) showed that examination of nearly 75,500 cases in China exposed that airborne transmission did not occur.

In relation to total knowledge about covid-19, more than half of pediatric nursing students had adequate knowledge about covid-19 these can be interpreted that governmental attention in Egypt efforts to raise public awareness about the Corona virus. This result is in agreement with (Olaimat et al., 2020) who reported a high knowledge score among University Students of Jordanian.

Also, (Xue et al., 2021) reported that more than 80% have adequate information about COVID-19. In addition to, Tadesse et al., 2020 reported that 74% of the participants had good knowledge regarding the COVID-19 outbreaks.

The recent study found that more than a fifth of students had a bad attitude towards the spread of the coronavirus, based on their approaches. This is in contrast with Abdelhafiz et al., (2020) who discovered that participants' attitudes on steps that can be taken to reduce the spread of disease were usually positive. They strongly believed in the need of washing one's hands and avoiding unnecessary close contact. Only approximately 35 % of participants were willing to use a face mask, even though roughly three-quarters of them thought it may protect them from disease. This can be due to easier access to social media, most of them had a thorough awareness of the disease. Also, Subedi et al., (2020) indicated a positive outlook on the spread of COVID-19. In the same line Banik et al., (2020) & Tadesse et al., (2020) also found that most participants had optimistic approaches toward COVID-19.

According to the current study's analysis of students' behaviors during the coronavirus outbreak, the majority of students had unsatisfactory practices. This can be interpreted as the long period of the epidemic in which the study was done in 2021 after one year of disease spread that make people bored and lose their interest to follow protective measures also, most students know that this disease is dangerous to children and older persons and its effect is less dangerous on youth. This was in the same line as (Srichan et al. 2020) who discovered that 54.8% of people rarely used soap when washing their hands.

In contrast to that, Xue et al., (2021) & Subedi et al., (2020) who reported that during the COVID-19 outbreak, students had acceptable practices regarding the disease. Also, Tadesse et al., (2020) indicated that 67 % of nurses had effective practises related to COVID-19. In addition, (Zhong et al, 2020) found that 89.7% of healthcare professionals handled COVID-19 cases in accordance with best practises. also, the Jordan study done by (Alzoub et al, 2020) reported that students displayed positive practices toward COVID-19 prevention.

According to the results of the current study showed that, the majority of students had unfavorable

psychological reactions to the spread of illness. This was in the same line with Xue et al., (2021) they found a substantial link between mental health disorders and lower knowledge, attitude and practice scores. Preventing communicable diseases includes addressing mental health issues. When the scope of the pandemic and its potential effects on health are unknown, mental health problems like fear and misery appear. Also, (Tadesse et al., (2020) discovered that the COVID-19 caused abnormal psychological reactions in 85,3% of nurses.

Conclusion:

The study concluded that 53% of pediatric nursing students had adequate knowledge, 15.5% had satisfactory practices, 74.3% had positive attitude and 50% had positive psychological response. There is a highly statistical significance difference between total knowledge and total practice p value (0.001). Also there is a highly statistical significance difference between total knowledge and total attitude p value (0.001) while there is no statistical significance between knowledge & psychological response p-value (0.727).

Recommendations

1. Should be developed according to their areas of knowledge and practice deficits and provided for students.
2. This study should be replicated on a larger sample of nursing students to generalize the results of the study.
3. Knowledge, practices related to Covid 19 and other epidemic diseases should be studied and added in the curriculum of nursing faculties and institutes.

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